[0210] In the embodiment depicted in Figure [[15B]] 14B, the conductive rollers 1506 are plurality of balls disposed in one or more conductive carriers 1520. Each conductive carrier 1520 is disposed in a slot 1508 formed in the polishing surface 1502 of the conductive article 1500. The conductive rollers 1506 generally extend from the polishing surface 1502 and are configured to provide electrical contact with the metal surface of the substrate being polished. The conductive rollers 1506 may be formed from any conductive material, or formed from a core 1522 at least partially coated with a conductive covering 1524. In the embodiment depicted in Figure [[15B]] 14B, the conductive rollers 1506 have a polymer core 1522 at least partially covered by a soft conductive material 1524. An example is a TORLON™ polymer core coated with conductive gold layer using copper as seeding layer between TORLON™ and gold layer. Another example is TORLON™ or other polymer core coated with a layer of copper or other conductive material. Other soft conductive materials 1524 include, but are not limited to, silver, copper, tin and the like.

7/24/07

214

[0211] In the embodiment depicted in Figure [[15B]] 14B, a resilient member 1510 may be disposed in the respective slots 1508 between the conductive carriers 1520 and the conductive portion 1504. The resilient member 1510 allows the conductive rollers 1506 (and carrier 1520) to move relative to the conductive portion 1504, thereby providing enhanced compliance to the substrate for more uniform electrical contact during polishing.

7/24/07

215

[0212] In the embodiment depicted in Figure [[15C]] 14C, the conductive rollers 1506 are respectively disposed in a plurality of electrically insulative housings 1530 that are coupled to the disc 206. Each housing 1530 may be coupled to the disc 206 by welding, adhesives, staking or other methods. In the embodiment depicted in Figure 7C, the housings 1530 are threaded into the disc 206.

[0221] In the embodiment depicted in Figure [[15C]] 14C, the pad assembly 1540 includes a dielectric layer 1550, a subpad 1552 and an electrode 1554. The dielectric layer 1550, the subpad 1552 and the electrode 1554 may be coupled together as a replaceable unit, for example by compression molding, staking, fastening, adhering, bonding or by other coupling methods.

7/24/07

[0223] A second set of apertures 1544 (one of which is shown in Figure [[FC]] 14C) may be formed at least through the dielectric layer 1550 through at least the dielectric layer 1550 and the subpad 1552 to allow electrolyte disposed on the pad assembly 1540 to provide a current path between the electrode 1554 and the substrate 114. Optionally, the apertures 1544 may extend into or through the electrode 1554. A window (not shown) may also be formed in the pad assembly 1540 as described above with reference to Figure 7F to facilitate process control.

7/24/07

[0224] In the embodiment depicted in Figure [[15D]] 14D, a pad assembly 1560 includes at least a conductive layer 1562, a subpad 1564 and an electrode 1554. The conductive layer 1562, the subpad 1564 and the electrode 1554 may be coupled together as a replaceable unit. The pad assembly 1560 may include first apertures 1570 configured to accept the housing 1530 and second apertures 1572 to allow electrolyte disposed on the pad assembly 1560 to establish a current path between the substrate 114 and the electrode 1554. A window (not shown) may also be formed in the pad assembly 1560 as described above

[0228] Figure [[16]] 15 is a sectional view of another embodiment of a conductive article 1600. The conductive article 1600 generally includes a conductive portion 1602 adapted to contact a substrate during polishing, an article support portion 1604 and an interposed pad 1606 sandwiched between